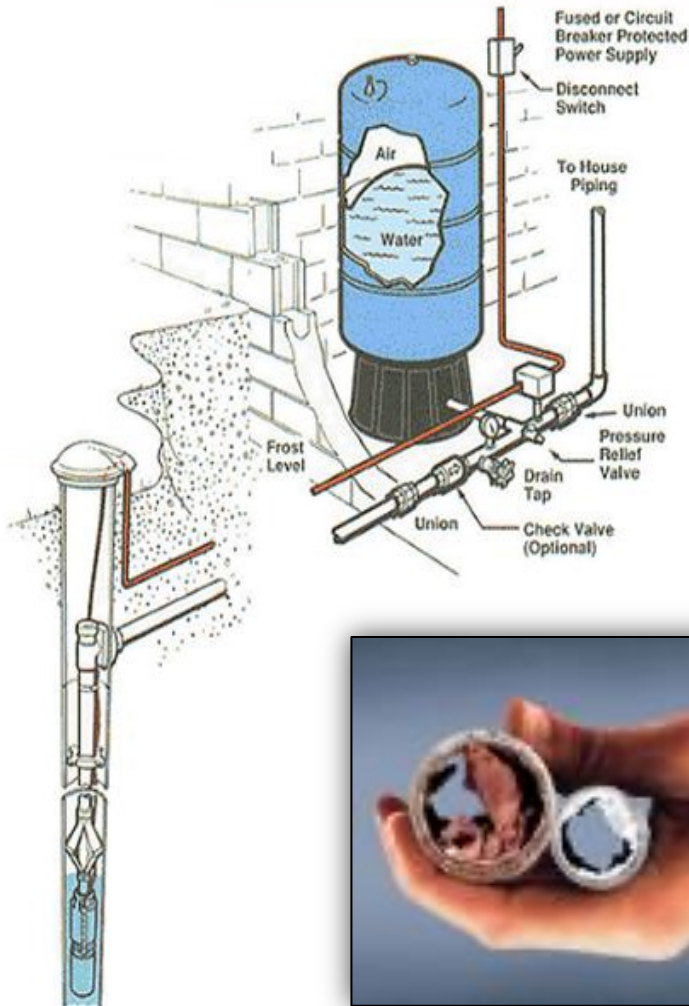


Groundwater and Wells

An Overview for a Well Owner or Well Operator



Laurie Lyons

Groundwater Protection Officer
South Area Groundwater Science
Ministry of Forests

Kamloops, February 28, 2023

laurie.lyons@gov.bc.ca or 250-312-7262



Common Groundwater Well Problems

Causes



Water quantity:

- Low well yields
- Well interference
- Seasonal water shortages
- Aquifer over use and depletion

Water quality:

- Natural minerals
- Land use practices (manure, sewerage systems, pesticides)
- Wells:
 - Inactive or abandoned
 - Poor construction, maintenance and /or operation
 - Casing failure
 - Biofouling
 - Mineral incrustation
 - Sediment plugging





Groundwater

Myth vs Fact

Myth: Groundwater is not a significant source of water supply.

Fact: 1% of water is useable; 99% of which is groundwater

Myth: Groundwater has few uses.

Fact: water supply systems, geothermal, irrigation , livestock, mining, manufacturing

Myth: there is a lake or river beneath our feet

Fact: Groundwater fills the pores and fissures of the substrate material

Myth: Groundwater moves rapidly

Fact:

- Groundwater rates measured feet or centimeters per day/month/year or decade
- Surface water rates feet or centimeters per second/day



Groundwater

Myth vs Fact

Myth: Lots of water. Therefore, doesn't need to be conserved.

Fact:

- Pumping groundwater at a rate greater than the rate of recharge replenishment, depletes aquifer storage capacity resulting in serious groundwater mining.
- Conserve to maintain water quantity



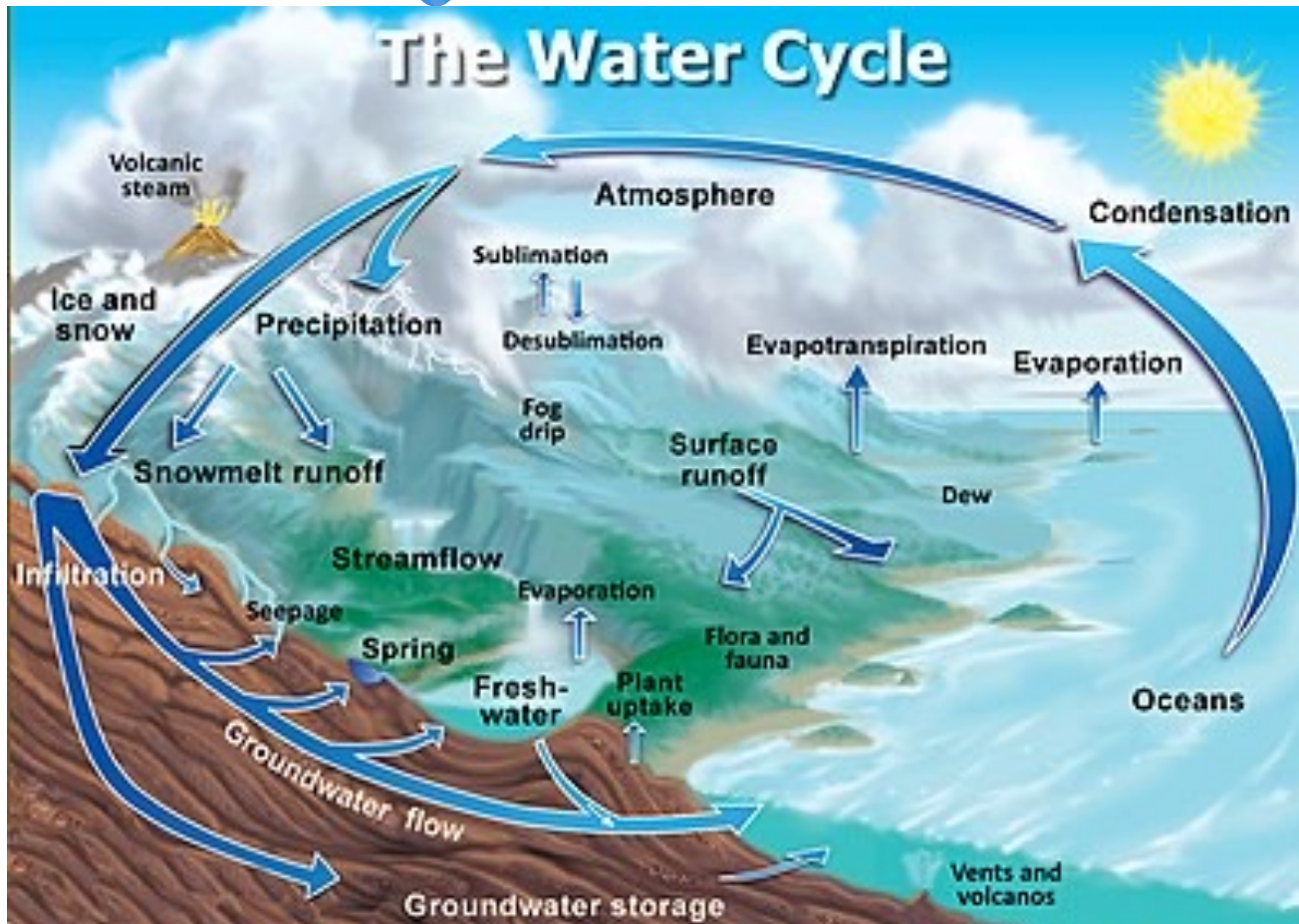
Photo: Dr. Joseph R. Poland, USGS, Public Domain

Subsidence Fact:

- Ottawa subdivision, 1970's
- Parts of Mexico City, 10 meters in 70 years
- USGS – 80% of identified subsidence from exploitation of groundwater (California, New Hampshire, Vermont, Southwest)

Groundwater

Hydrologic Cycle



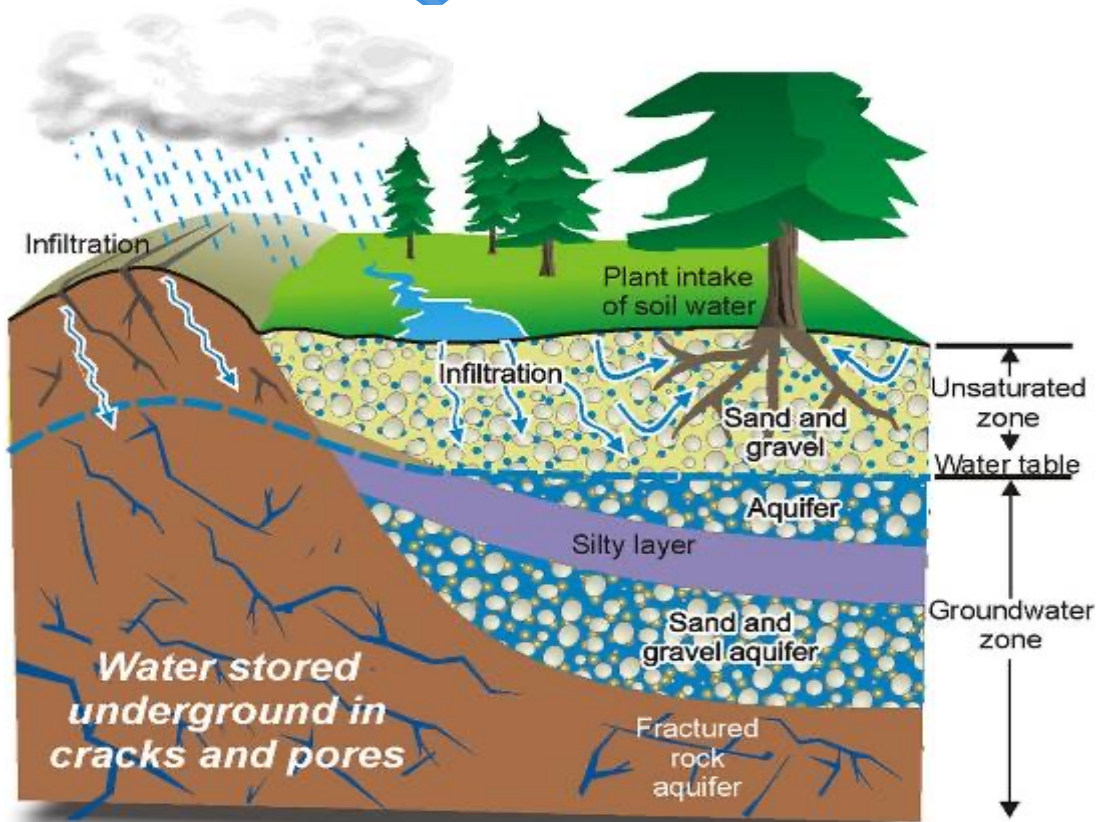
Hydrologic Cycle

The amount of water on Earth remains constant.

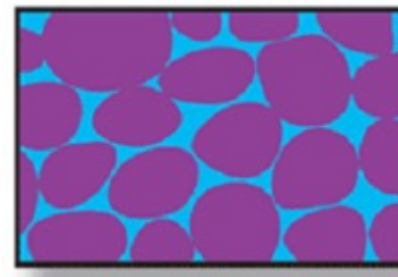
Groundwater

- Collects in substrate spaces
- Travel or be absorbed
- Pumped to surface

BC Interior Aquifers



- Geological formation that contains groundwater
- Aquifer material type, grain size and porosity affect quantity and quality.
- Ground surface and subsurface material permeability affects:
 - Precipitation infiltration rate,
 - Storage capability,
 - Rate of contamination movement.



Water between Sand Grains

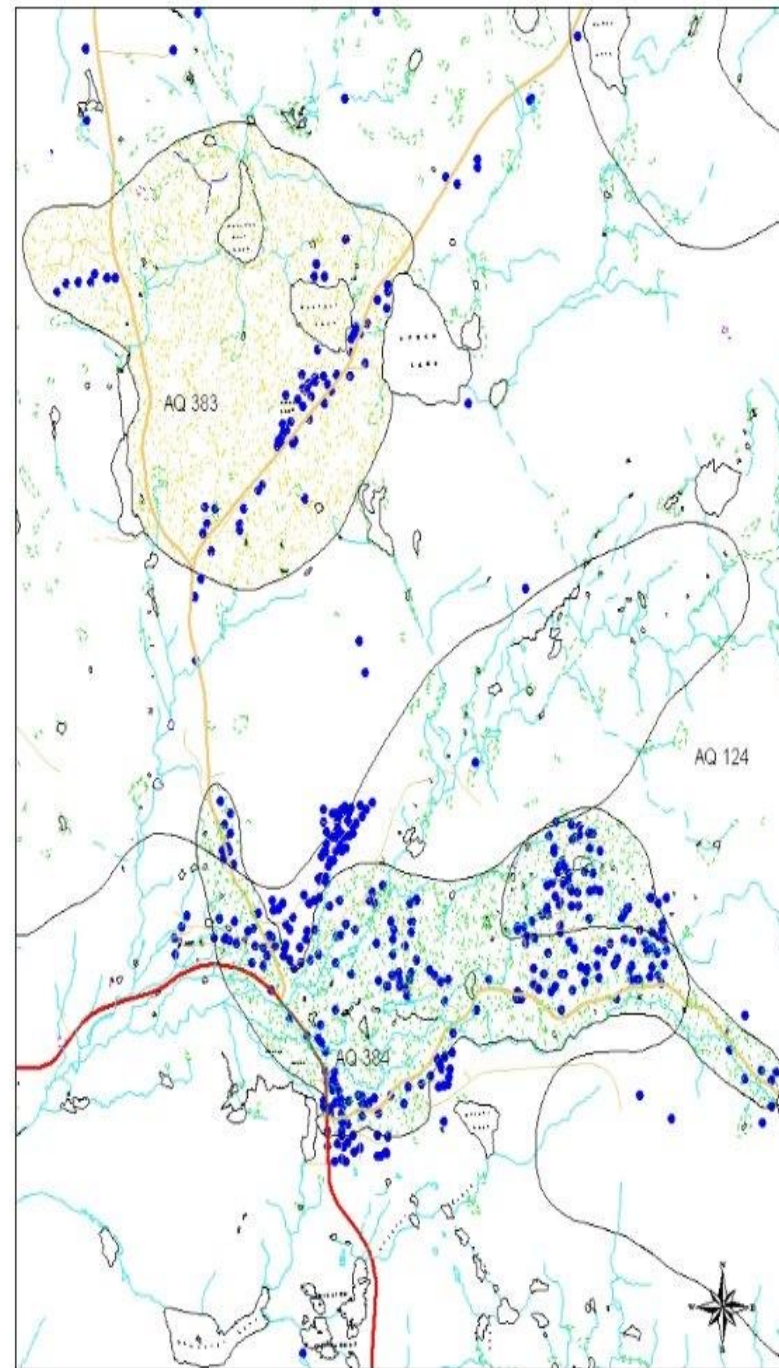


Water in Rock Fractures

Aquifers

Aquifer Resources:

- Aquifer Classification System (<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/understanding-aquifers>)
- Mapping Programs:
 - BC Water Resource Atlas
 - iMap
- Aquifer Search: GWELLS (<https://apps.nrs.gov.bc.ca/gwells>)



BRITISH COLUMBIA Groundwater Wells and Aquifers

Well Search | Aquifer Search | Registry Search | Groundwater Information

Aquifer Search / Aquifer Summary

Aquifer 384 Summary

Aquifer number	384
Year of mapping	2000
Aquifer name	
Litho stratigraphic unit	
Descriptive location	150 Mile House, B. C.
Vulnerability	Low
Material type	Sand and Gravel
Subtype	Confined sand and gravel - glacial
Quality concerns	None
Productivity	Moderate
Size (km ²)	12.2
Calculated well density	Moderate

Well Top Number: 77082
Identification Plate Number: —
Address: Unrelated well

Legend
Cadastrals
EcoCal
Surface water licences
Groundwater licences
Wells
Observation wells
EMS wells
Unrelated wells

Well Information

Number of wells related to the aquifer	101
Number of uncorrelated wells within mapped aquifer extent	183
Artesian wells	1 artesian wells in aquifer

Well info last updated 2/15/2022

Documentation

Factsheets

- AQ_00384_Aquifer_Factsheet.pdf

Other Documents

- AQ_00384_Aquifer_Mapping_Report.pdf

Licensing Information

The licensing summaries should be considered estimates. Due to complexities in the structure of the licensing data, reported values should be confirmed through the [e-licensing portal](#).

Number of groundwater licences	1
Water withdrawal volume (annual)	No information available.

Licensed volume by purpose (millions of cubic meters)

■ Camps & Public Facilities <0.01

Knowledge Indicators

Advanced mapping	No information available.
Artesian advisory	No information available.
Observation wells	No information available.
Numerical model	No information available.
Pumping stress index	Stress Index Report
Water budget	No information available.
Water quality information	3 wells with an EMS ID
Hydraulically connected (screening level)	Less likely
Groundwater Surface Water Interactions	No information available.
Other information	No information available.



Well Reports - Well Registration – Water License

- Do you have a copy of your well record (construction report)?
- Is your well registered? Record available in GWELLS (<https://apps.nrs.gov.bc.ca/gwells/>)
- Submission of well records mandatory, March 1, 2016.
 - Responsibility for drilled well – well driller
 - Responsibility for dug well – well owner
- Contact groundwater@gov.bc.ca
- Water License mandatory for groundwater use, March 1, 2016
 - Exception: Domestic Use (single family dwelling)
 - (<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights>)
 - Contact FrontCounter BC (<https://portal.nrs.gov.bc.ca/web/client/contact>)
 - BCeID recommended (<https://www.bceid.ca/>)
 - Not a Health Authority Well Construction Permit

Well Construction Report
 Well Closure Report
 Well Alteration Report

Stamp company name/address/ phone/fax/email here, if desired.

Ministry Well ID Plate Number: _____
 Ministry Well Tag Number: 55800
 Existing Well Tag Number: _____
 Confirmation/alternative specs. attached
 Original well construction report attached

Red lettering indicates minimum mandatory information See reverse for notes & definitions of abbreviations.

Owner Name: C/O DARRIN MCCORMACK (MANAGER) COBBLE HILL IMPROVEMENT DISTRICT
 Mailing address: _____ Town COWICHAN BAY Prov. BC Postal Code V0R 1N1
 Well location: Street 1135 HUTCHINSON RD Town COBBLE HILL
 Legal description: Lot _____ Plan 19273W D.L. _____ Block _____ Sec. 12 Twp. _____ Rg. 7 Land District SHAWINIGAN
 PID: 19177042 and Description of well location (attach sketch, if nec.): _____

NAD 83 Zone: 10 UTM Northing: 5303816 UTM Easting: 457248 Latitude (see note 3): 0° 00' 00.00"
 Longitude: 0° 00' 00.00"

Method of drilling: air rotary cable tool mud rotary auger driving jetting excavating other (specify): _____
 Orientation of well: vertical horizontal Ground elevation: _____ ft (asl) Method (see note 4): _____
 Class of well (see note 5): _____ Sub-class of well: _____
 Water supply well: indicate intended water use: private domestic water supply system irrigation commercial or industrial other (specify): _____

Lithologic description (see notes 7-14) or closure description (see notes 15 and 16)

From (ft)	To (ft)	Relative Hardness	Colour	Description	Material Description (use recommended terms on reverse. List in order of decreasing amount, if applicable)	Water-bearing (USgpm)	Observations (e.g. fractured, weathered, well sorted, silty wash), closure details
0	1.4				caprock brown gravel and sand		
1.4	20				brown silty sand		
20	85				grey silt		
85	134				very silty grey gravel and sand		
134	143				brown (grey and green)		
143	148				silty brown sand		
148	155				coarse brown sand		

Casing details

From (ft)	To (ft)	Da (in)	Casing Material/Open Hole	Wall Thickness (in)	Drive Shoe
0	15.5	8	Other	0.25	

Screen details

From (ft)	To (ft)	Da (in)	Type (see note 18)	Slot Size
15.5	155	8		1/8

Surface seal: Type: _____ Depth: _____ ft
 Method of installation: Air lifting Pumped Surging Jetting Pumping Bailing
 Backfill: Type: _____ Thickness: _____ in
 Diameter: _____ in Thickness: _____ in
 From: _____ ft to: _____ ft Perforated: From: _____ ft to: _____ ft to: _____ ft to: _____ ft

Intake: Screen Open bottom Uncased hole
 Screen type: Telescope Pipe size
 Screen material: Stainless steel Plastic Other (specify): _____
 Screen opening: Continuous slot Slotted Perforated Pipe
 Liner: PVC Other (specify): _____
 Screen bottom: Ball Plug Plate Other (specify): _____
 Filter pack: From: _____ ft To: _____ ft Thickness: _____ in
 Type and size of material: _____

Developed by: _____
 Air lifting Surging Jetting Pumping Bailing
 Other (specify): _____ Total duration: _____ hrs
 Note: DEVELOPED BY BAILING

Well yield estimated by: _____
 Pumping Air lifting Bailing Other (specify): _____
 Rate: _____ USgpm Duration: _____ hrs
 SWL before test: _____ ft (bbs) Pumping water level: _____ ft (bbs)

Obvious water quality characteristics:
 Fresh salty Clear cloudy Sediment Gas
 Coarandour: _____ Water sample collected:

Well driller (print clearly): _____
 Name (first, last) (see note 19): GARTH DOEGE
 Registration no. (see note 20): _____
 Consultant (if applicable name and company): _____

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the Water Act and the Ground Water Protection Regulation.
 Signature of Driller Responsible: _____

Final well completion data:
 Total depth drilled: _____ ft Finished well depth: _____ ft to: _____ ft
 Final stick up: _____ in Depth to bedrock: _____ ft to: _____ ft
 SWL: _____ (bbs) Estimated well yield: _____ USgpm
 Artesian flow: _____ USgpm or artesian pressure: _____ ft
 Type of well cap: _____ Well disinfected: yes no
 Where well ID plate is attached: _____

Well closure information:
 Reason for closure: _____
 Method of closure: _____
 Casing material: _____ Backfill material: _____
 Details of closure: _____

Date of work (YYYYMMDD): _____ Completed: _____
 Started: 1999/03/05
 Comment: _____



Key Resource – GWELLS

Aquifers – Wells- Registry

Groundwater Wells and Aquifers <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers>
Provincial database: GWELLS <https://apps.nrs.gov.bc.ca/gwells/>

Please note, well registration and groundwater use licensing are different. Your well has been registered if you can locate it using this tool. Non-domestic groundwater use requires a water licence. Contact FrontCounter BC at 1-877-855-3222.

Well Search

Not all groundwater wells are registered with the province, as registration was voluntary until February 29, 2016. Data quality issues may impact search results.

Search by one of the fields below, or zoom to a location on the map.

Basic Search | Advanced Search

Search by well tag or ID plate number, street address, city or owner name ?

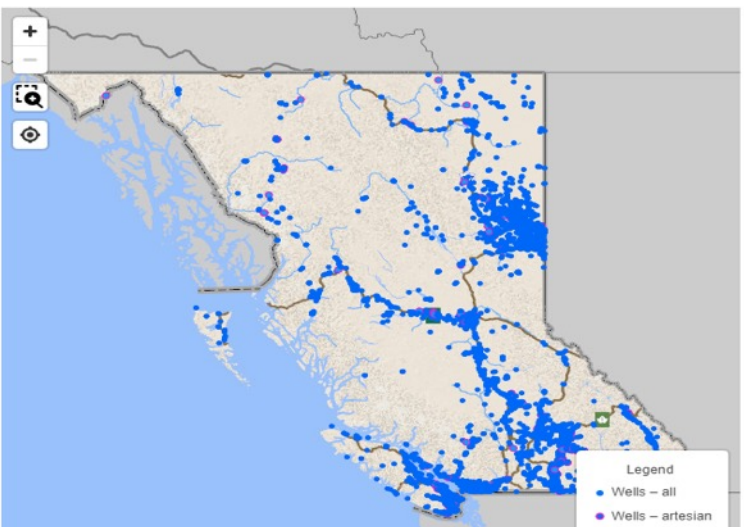
Search Reset

Download all wells

- Well extract (XLSX) (46 MB) - June 7, 2022
- Well extract (ZIP, CSV) (17 MB) - June 7, 2022

For additional search options, try:

- B.C. Water Resource Atlas
- iMapBC



Well Summary

For best print results, use the Chrome browser

Well Tag Number: 74721	Well Status: New	Observation Well Number:
Well Identification Plate Number:	Well Class: Water Supply	Observation Well Status:
Owner Name: GEORGE OBERMEYER	Well Subclass:	Environmental Monitoring System (EMS) ID:
Intended Water Use: Private Domestic	Aquifer Number: 488	Alternative specs submitted: No
Artesian Condition: No		

Sections

Location Information	Casing Details	Well Yield
Well Activity	Surface Seal and Backfill Details	Well Decommissioning
Well Work Dates	Liner Details	Comments
Well Completion Data and Artesian Flow	Screen Details	Disclaimer
Lithology	Well Development	

Licensing Information

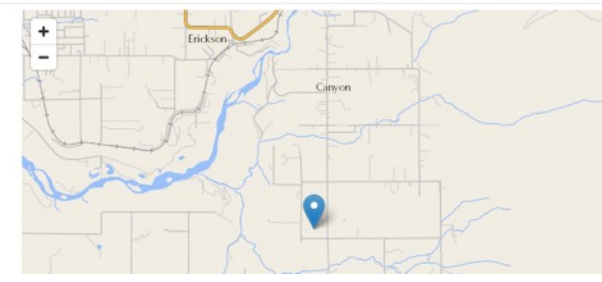
Licensed Status: Unlicensed	Licence Number:
-----------------------------	-----------------

Location Information

Street Address:
Town/City: CANYON

Legal Description:


Lot	8
Plan	1420
District Lot	812
Block	
Section	
Township	
Range	





Key Resource – GWELLS

Aquifers – Wells- Registry



BRITISH COLUMBIA Groundwater Wells and Aquifers

Well Search | Aquifer Search | Registry Search | Groundwater Information

Search for a Well Driller or Well Pump Installer

To update contact information or for general enquiries email groundwater@gov.bc.ca.

[Learn more about registering as a well driller or well pump installer in B.C.](#)

Choose professional type:

- Well Driller Well Pump Installer

Community:

- All
- BC
 - 100 Mile House
 - 150 Mile House
 - Abbotsford
 - Aldergrove

Individual, company, or registration number

Entries:

Well Driller Results

To update contact information email groundwater@gov.bc.ca.

Name	Company Name	Company Address	Contact Information	Class of Driller	Certificate Issued By
Barling, Chris WD 09032301	Wild West Drilling Inc.	1063 Simmons Road Creston, BC V0B 1G7	Phone: (250) 428-0137 Email: wildwestdrilling@gmail.com	Water Well Driller Geotechnical/Environmental Driller Geoexchange Driller	Water Well Driller Certificate - BC Water Well Driller Certificate - BC Water Well Driller Certificate - BC
Randall, Matthew WD 17081801	Wild West Drilling Inc.	1063 Simmons Road Creston, BC V0B 1G7	Phone: (250) 428-0137 Email: wildwestdrilling@gmail.com	Water Well Driller	Water Well Driller Certificate - BC

Showing 1 to 2 of 2

Previous Next

Water Sustainability Act (WSA) Restricted Activity



WSA (s. 49, 50) restricts well construction, decommissioning and pump installation
Well Driller (WD) and Well Pump Installer Registry GWELLS Registry Search
(<https://apps.nrs.gov.bc.ca/gwells/registries>)



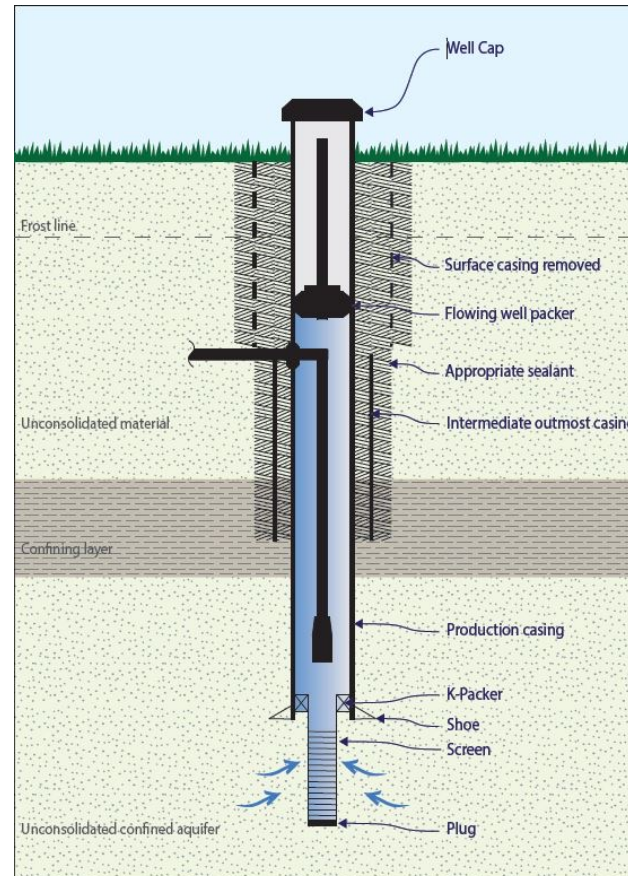
Photo: L. Lyons

- WD & WPI roles and responsibilities
- Minimum standards for well construction, decommissioning and reporting
- Flowing artesian well requirements
- Minimum standards for well pumps



Photo: B. Hack

Components of a Well



Schematic Credit: BC LWRS

1. Borehole
2. Casing
3. Surface Seal
 - Prevents contamination from surface
 - Prevents mixing of aquifers
4. Well Intake – Screen or Slotted liner
5. Pitless Adaptor
6. Pump
 - Properly matched to recommended pumping rate
7. Well Cap



Why hire a well driller or pump installer?

Protect groundwater resource



Photo: L. Lyons



Photo: L. Lyons



Photo: P. Epp



Photo: P. Epp



Photo: P. Epp

Well Location

Water quantity and quality impacts

What to consider:

- Sources of contamination (30 m and 3 m)
- Power lines and power pole location (20 m)
- Buildings (6 m)
- Surface water (30 m)
- Other wells (15 m)



Photo: L. Lyons



Photo: L. Lyons



Photo: L. Lyons



Photo: P. Epp



Photo: J. WRS

Photo: M. Wei

What Kind of Well do I have?



Abandoned or Inactive Well



Dug Well



Drilled Well in a Pit or Vault



Drilled Well

Inactive or Abandoned Wells

Water quality impacts

- Must maintain until decommission
- Decommission deactivated wells after 5 years
- Hire well driller or well pump installer



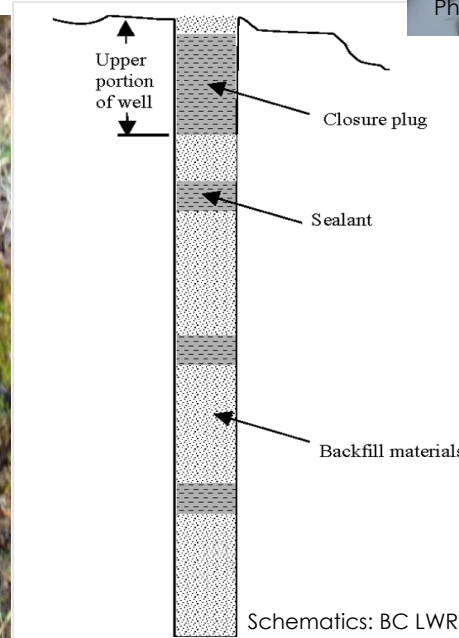
Photo: L. Lyons



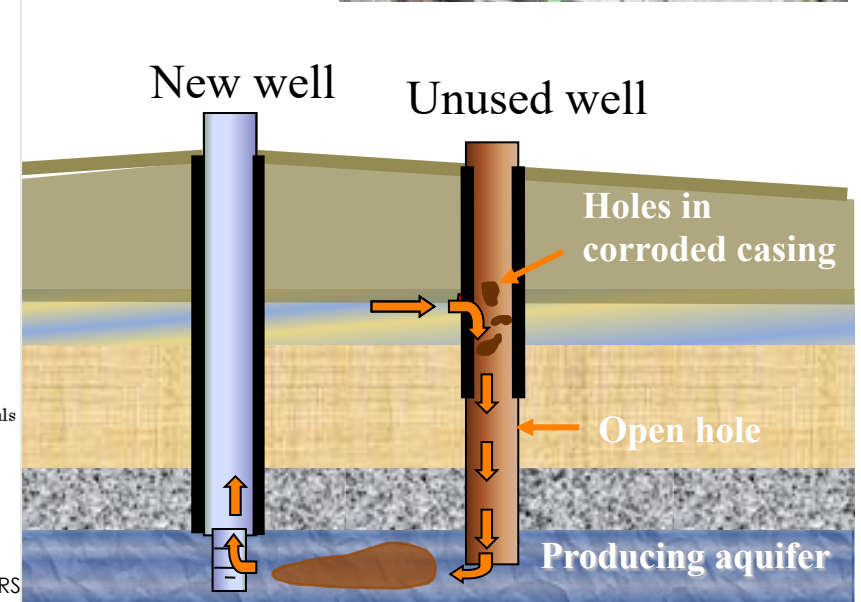
Photo: L. Lyons



Photo: L. Lyons



Schematics: BC LWRS



New well

Unused well

Holes in corroded casing

Open hole

Producing aquifer

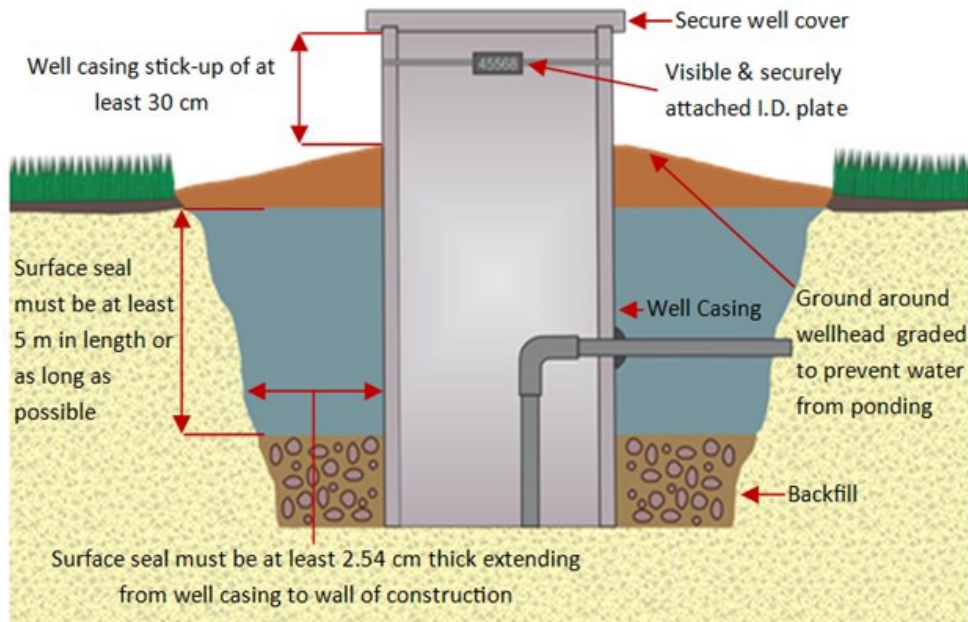


Photo: M. Simpson

Types of Wells – Construction Standards

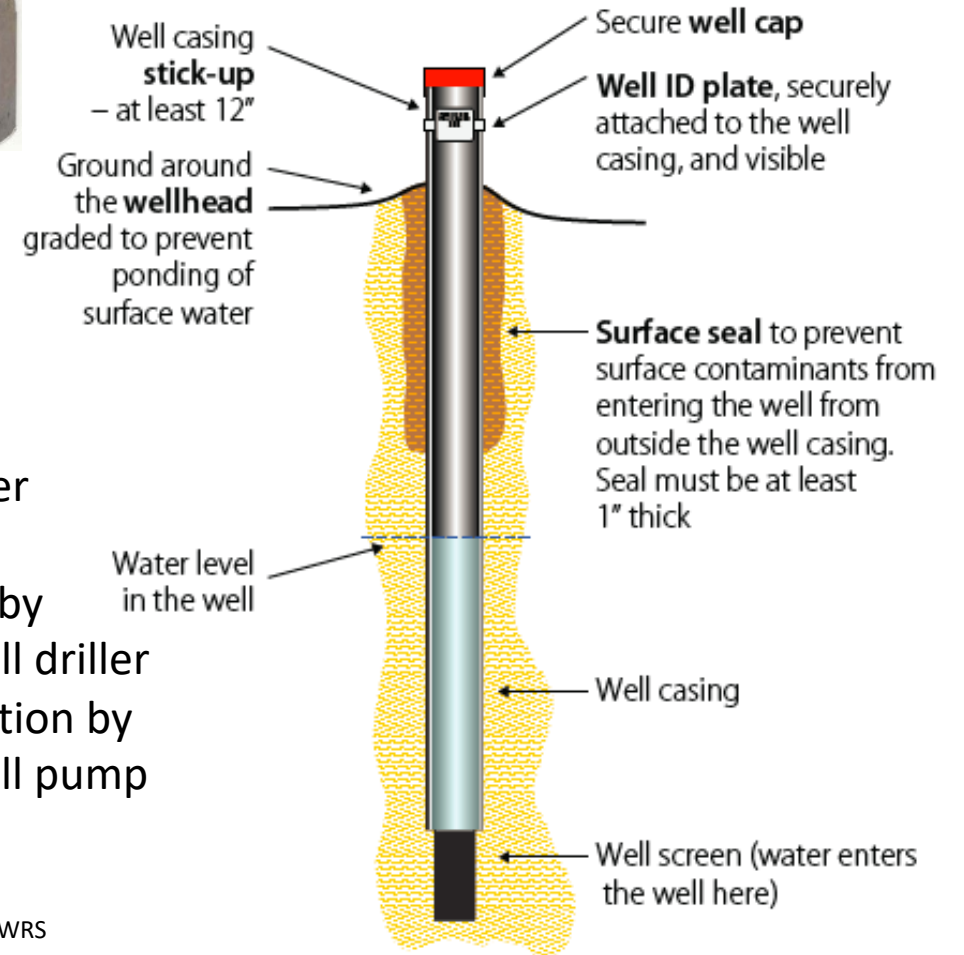
Dug Well:

- Large Diameter
- Shallow
- Construction by well owner, excavation contractor
- Pump installation by registered well pump installer (GWELLS Registry - <https://apps.nrs.gov.bc.ca/gwells/>)



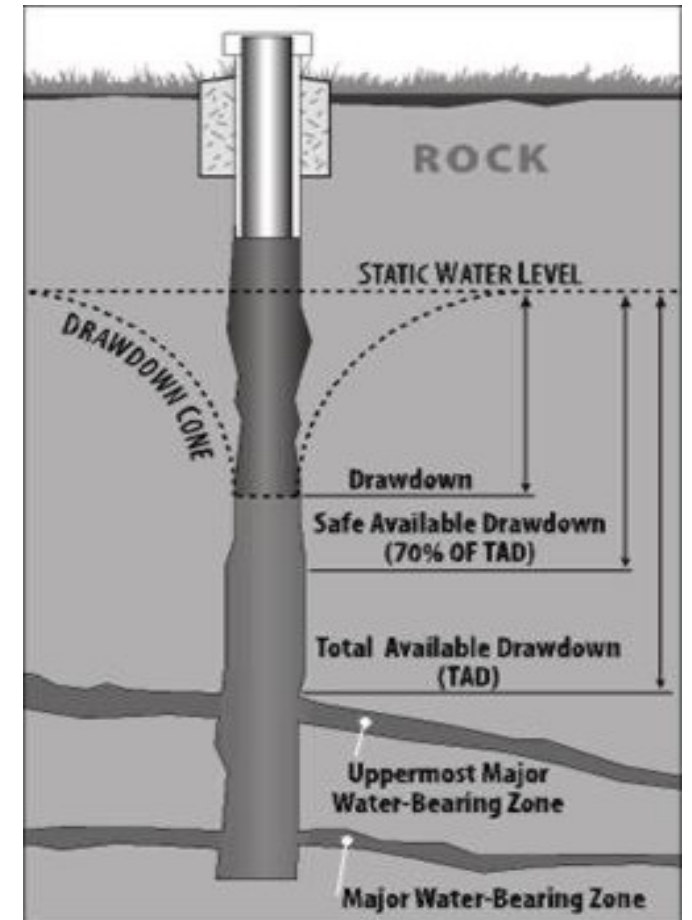
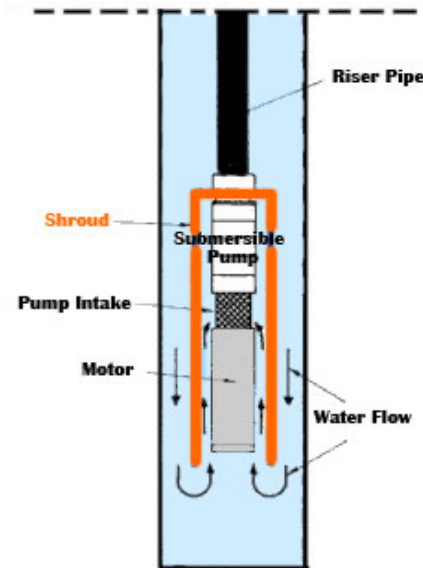
Drilled Well:

- Small diameter
- Deep
- Construction by registered well driller
- Pump installation by registered well pump installer

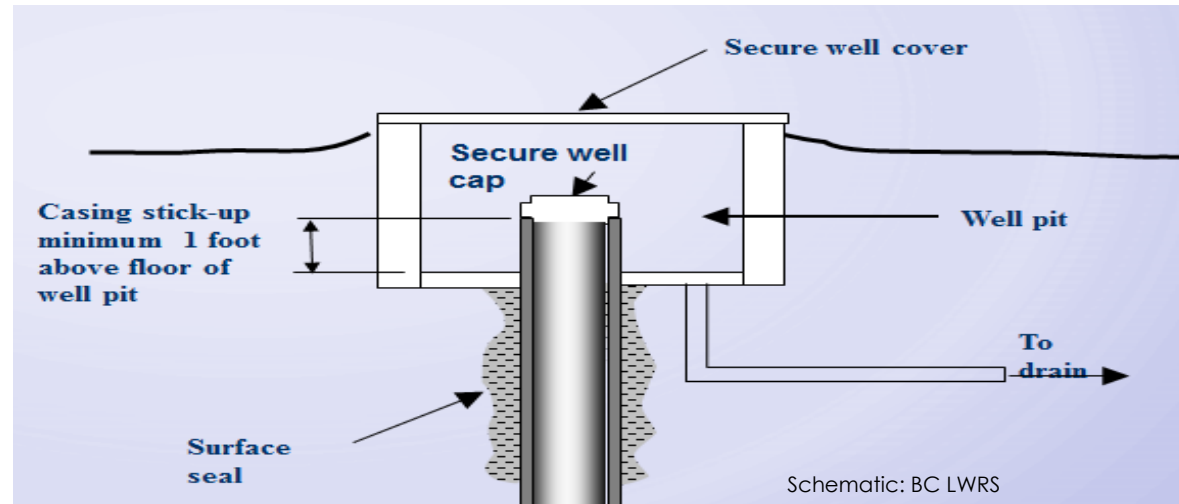


Drilled Bedrock Wells

- Generally deeper with low water yields
- Recommend PVC well liner
- Well drawdown should not be into or past water fracture zones
- Air in fracture zone will cause a change in water chemistry:
 - Natural mineral concentrations
 - Bacterial growth
 - Increase precipitate formation



Well In Pits



- Water must not pond around the wellhead.
- Encourage well owners to bring wells in pits above ground surface
- Must not construct a well pit for a new or altered well.

Exemption:

- Professional designs pit and oversees construction.
- Design & as-built drawings submitted to the comptroller for approval before construction begins

Remove a Well from a Pit or Vault

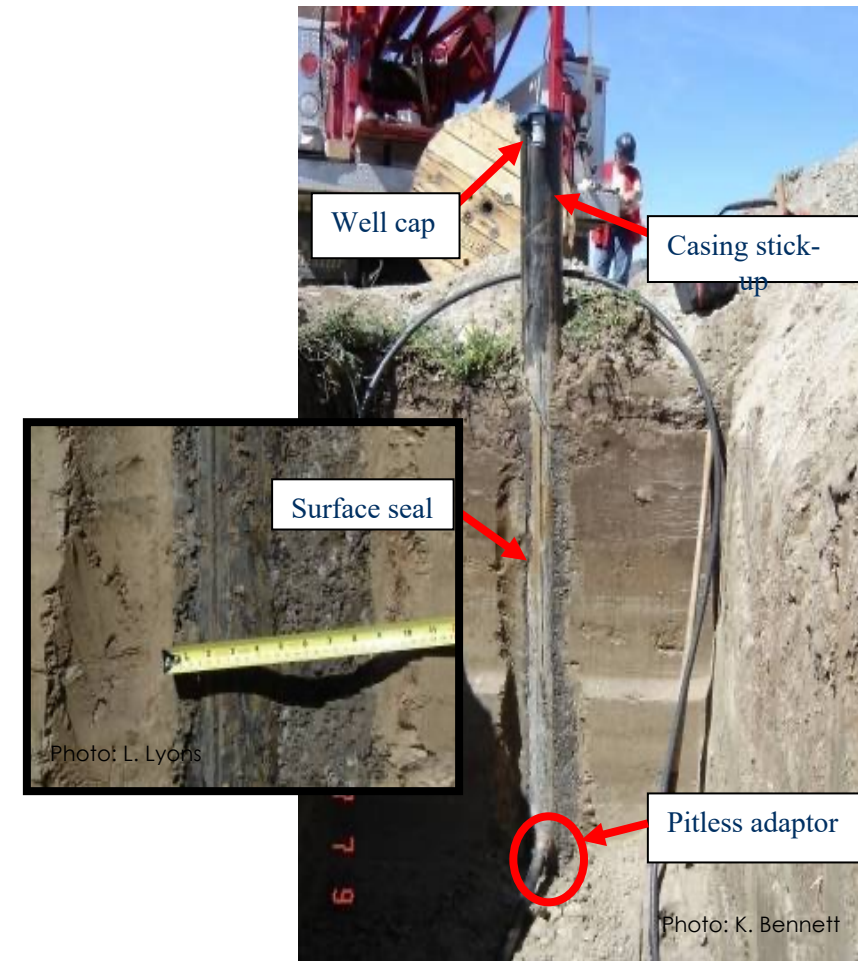


- Hire a well driller or well pump installer.
 - Confined space entry certification.
 - Remove well pit cribbing.
 - Extend well casing above ground level.
 - Install a pitless adapter .
 - Install surface seal.
 - Fill.
 - Graded wellhead.
 - Attach well id plate.
-
- Brochure on website
(https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-wells/upgrading_wells_in_pits.pdf)



Surface Seals

- Effective, permanent, continuous.
- For water supply wells, 5m in length or as long as possible up to 5m.
- Dug well 5 m surface seal length or to the greatest possible length.
- 2.54 cm thickness.
- Within 0.3 m of the ground surface.
- Well owner responsibility to maintain the surface seal by contacting WPI or WD.





Well Caps and Covers

Secure and vermin proof



Well Casing

Continuous with 0.3m stick-up



Photo: L. Lyons



Photo: L. Lyons



Photo: P. Epp



Photo: L. Lyons



Photo: S. Thompson



Photo: L. Lyons



Photo: L. Lyons

Wellhead Accessible and Protected



- Physical damage
- UV damage
- Contaminants



Photo: L. Lyons



Photo: P. Epp



Photo: P. Epp



Photo: L. Lyons



6-11-0102



Photo: L. Lyons



Photo: L. Lyons



Wellhead Accessible and Protected?

Protection of your groundwater source



Photo: L. Lyons



Photo: P. Epp



Photo: P. Epp

Well Legislation Summary

Store contaminants
>3m away

Protect casing stick-
up from damage

Keep ground sloped so
water runs away



Maintain clear access
to wellhead

Replace ID plate if lost
or damaged

Fill any visible
annular space with
sealant

Flowing Artesian Well

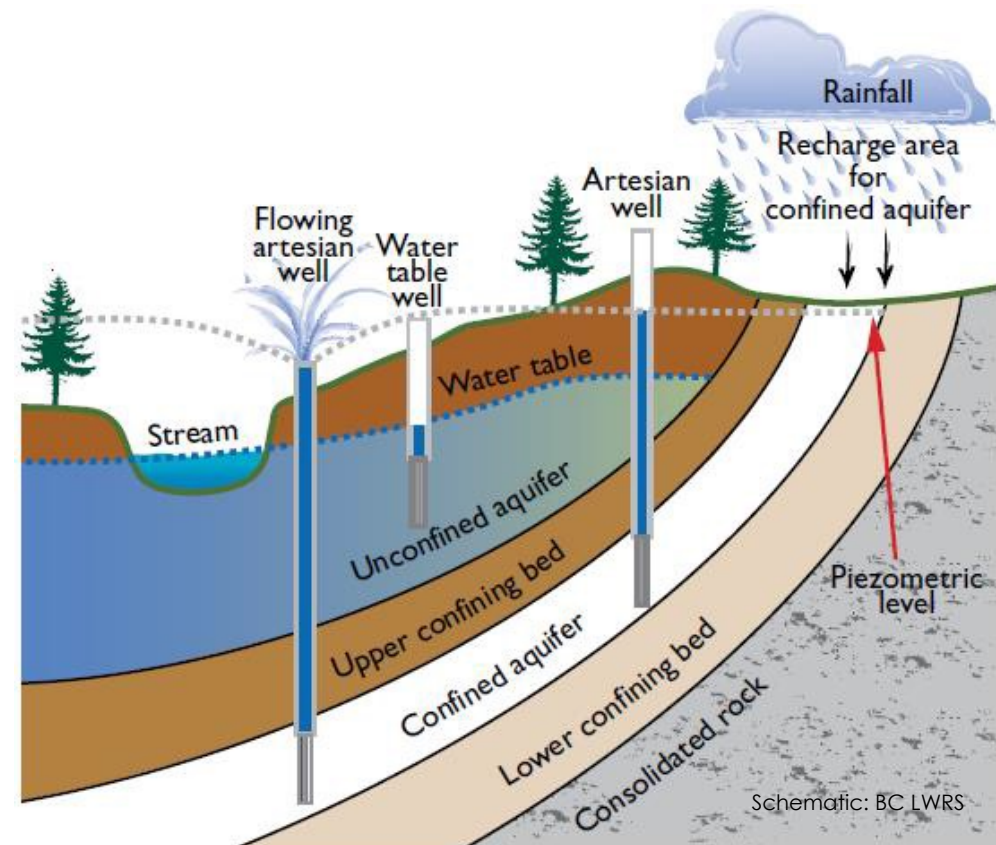
Water Quantity Impacts

Artesian Flow

Must be constructed and decommissioned by a water well driller.

An uncontrolled flowing artesian well:

- Wastes water
- May cause flooding damage and/or subsidence
- May lower the confining pressure and affect neighbouring wells, springs and nearby streams.



Flowing Artesian Wells

WSA s 52 (1) "Under Control" when the artesian flow:

- Clear of sediment
- Entirely conveyed through casing
- Can be mechanically stopped
- Does not pose a threat to property, public safety or the environment



Photo: T. Carriou



Photo: L. Lyons



Photo: M. Schibill



Photo: L. Lyons



Flowing Artesian Wells

What You Can Do

- Well owner's responsibility to:
 - Hire a water well driller or professional.
 - Does the well driller have experience to stop/control a flowing artesian well?
 - Ensure artesian flow is stopped and controlled or well decommissioned or alternate specification submitted and approved.
 - Understand maintenance, operational requirements, regular inspections of equipment (wellhead, pressure gauge, backflow preventor)
- **These wells are under pressure.**

Resources:

Brochure

(https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-wells/flowing_artesian_wells.pdf)

Well Drilling Advisory:

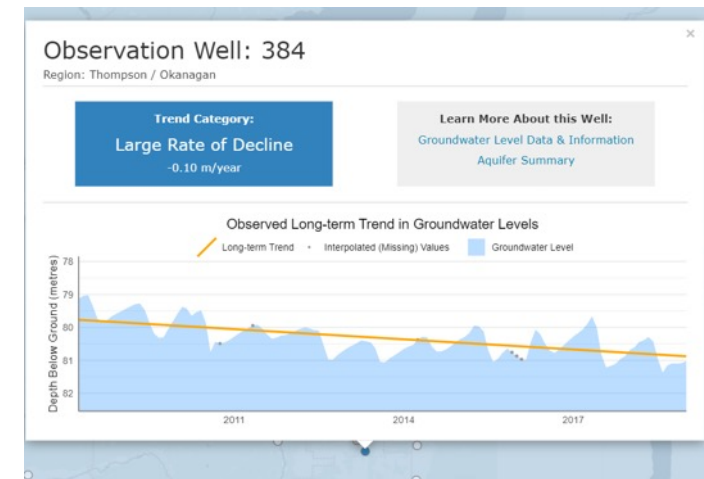
(<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-wells/information-for-well-drillers-well-pump-installers/well-drilling-advisories>)

Aquifer Depletion

- Aquifer water demand increase
 - Regional decline in well static water level
- Groundwater is removed faster than being recharged
 - Why? Overuse, drought, climate change, or flowing artesian wells
- Drop in well yield is not always due to aquifer depletion



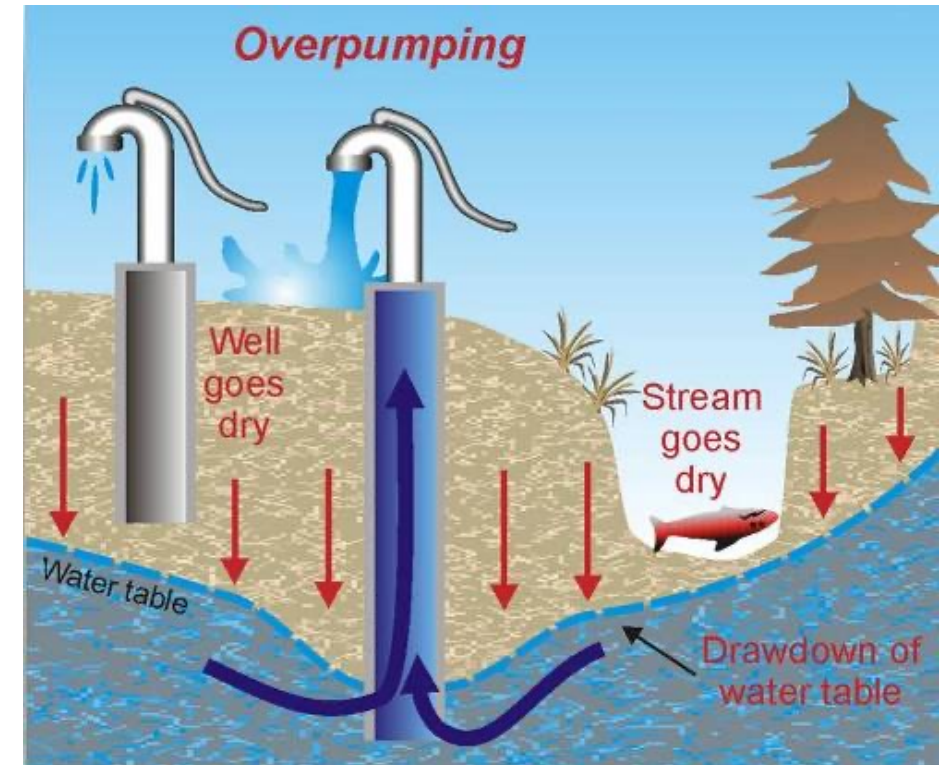
- State of Environment Report (<https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/reporting/environmental-reporting-bc>)



Well Interference

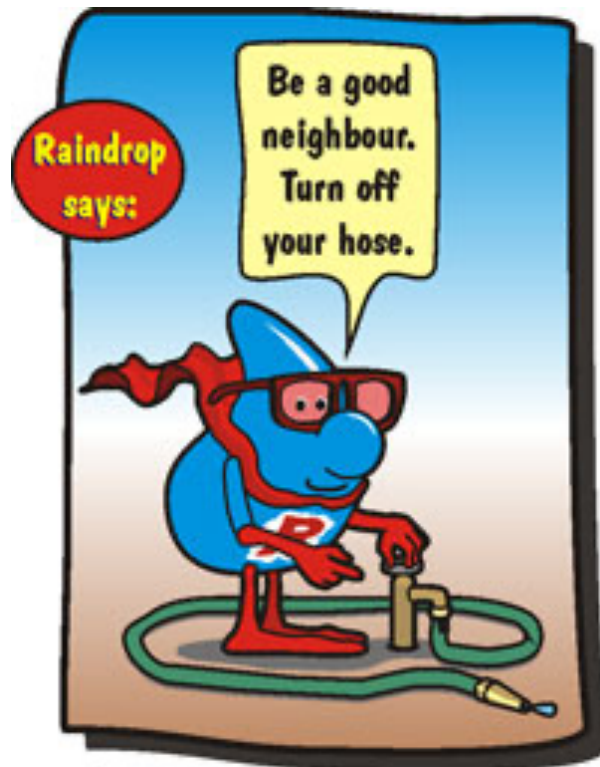
Water quantity

- Occurs when large volumes are pumped resulting in water loss for neighbouring wells.
- Over-pumping causes premature pump and well failure.
- Increases rate of corrosion, incrustation, biofouling and sediment movement.
- Accentuated by:
 - dry conditions, drought
 - Dewatering of bedrock microfractures
- **GWPR s 18** wells must be 15 m apart (alternate specifications)



Aquifer Depletion / Well Interference

What You Can Do



- Slow steady pumping
- Conserve water
- Learn to share the resource
- Decommission or control flowing artesian wells
- Acreage developments have closely spaced wells, generally all are drilled to a similar depth accessing the same aquifer
- Unsuccessful preventative measures:
 - Drill a deeper well
 - Cistern for water storage

Water Quality / Water Quantity

Downhole Impacts

Naturally occurring minerals

e.g. Iron and/or manganese, hardness (calcium & magnesium), boron, fluoride, sodium, sulphate, chloride, arsenic, or other metals

- Some water quality parameters can't be seen or smelled such as toxic metals (e.g. arsenic, lead, chromium) – need to test for these.

Impacts may occur through:

- Well casing deterioration
- Biofouling
- Mineral incrustation
- Sediment plugging



Photo: P. Epp

Biofouling – What is it?

- Nuisance bacteria that accumulate in a well.
 - Iron-related bacteria (IRB).
 - Sulphate-reducing bacteria (SRB).
 - Other slime forming bacteria.
- Pumping a well increases nutrients and oxygen leading to an increase in production of slime in groundwater susceptible to bacteria conditions.
- Gradual decrease in well yield and water quality



Biofouling - Symptoms

- Slime build-up on plumbing fixtures.
- Changes in water quality such as:
 - Water discolouration.
 - Staining of plumbing fixtures and laundry.
 - Bad taste and odour (rotten egg smell).
- Gradual decrease in yield.
- Increased corrosion of metal parts in your well and distribution system.



Biofouling – What You Can Do



Well Screen Before

- Regularly test your well for bacteria.
- If bacteria found, disinfect your well.
- Contact a Well Driller or Well Pump Installer to clean the well before disinfecting, if needed.



Well Screen After

Mineral Incrustation/Scale – What is it?



- Common in shallow aquifer wells.
- Changes in pressure and temperature during pumping allowing dissolved minerals (calcium, magnesium, iron) precipitate and plug the well intake.
- May also affect aquifer material around the outside of the well.



Photo: P. Epp

Mineral Incrustation / Scale

Symptoms:

- Build up of mineral incrustation/scale in your well and on plumbing fixtures.
- Gradual decrease in yield.



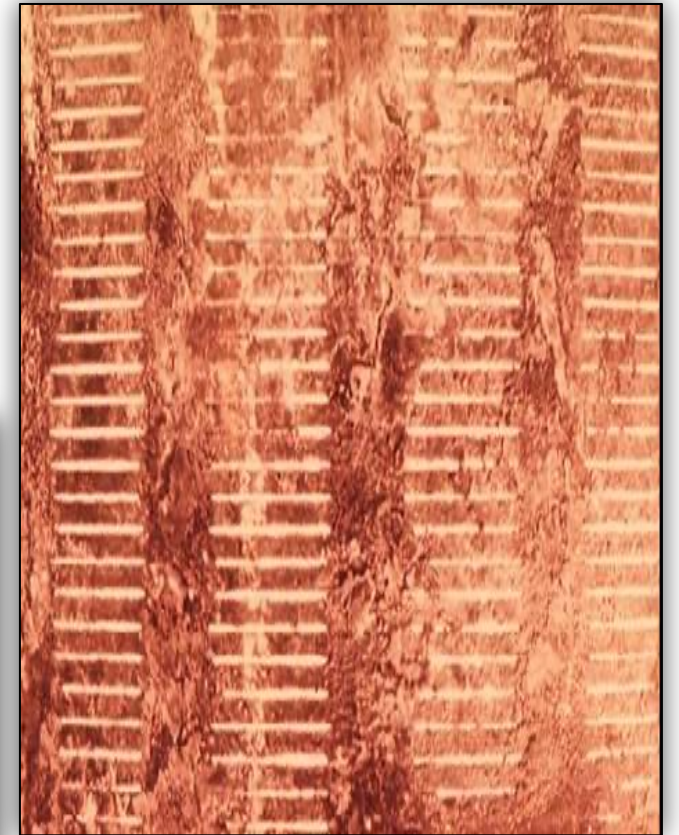
What you can do:

- Perform chemical analysis to determine risk
- Reduce pumping rate
- Longer pumping intervals.
- Hire a Well Driller or Well Pump Installer.



Sediment Plugging – What Is It?

- Sediment plugs well screen and surrounding aquifer.
- Accelerated by:
 - Poor well design and construction.
 - Inadequate development before well is put into production.
 - Over-pumping.





Sediment Plugging

- **Symptoms**

- Increased sediment in the water
- Decrease in yield
 - Well won't provide the amount of water you're used to
 - Static water level remains unchanged but pumping water level declines.



- **What you can do**

- **Existing Wells:**

- Reduce pumping rate
- Provide storage
- Have a professional look at your well.

- **New Wells:**

- Talk to well driller or well pump installer about proper design and development
- Have your well system designed to meet your needs based on the well capacity.



When to Test a Well?

Natural occurring minerals; contamination of bacteria or harmful chemicals

Bacteria:

- Early spring
- After any major plumbing work or work done on well or well pump.
- After you move into a new home.
- When you detect any changes in your water quality. e.g.: Clarity, Colour, Odour, Taste.
- When a new child is brought into the home.

Chemicals & other Parameters*:

- Test every 3 – 5 years.
- Test during a dry period.

Note: If there is a treatment system in place the well should be monitored every 2 years for chemicals of concern.



When to Disinfect a Well?

- Immediately after installing a new well.
- Whenever you repair or replace your well, pump, or distribution system.
- Following change in water clarity, colour, odour, or taste.
- When lab results show coliform bacteria or *E. Coli* in water.
- When slime is present in toilet tank.

Before Disinfecting , inspect your well.

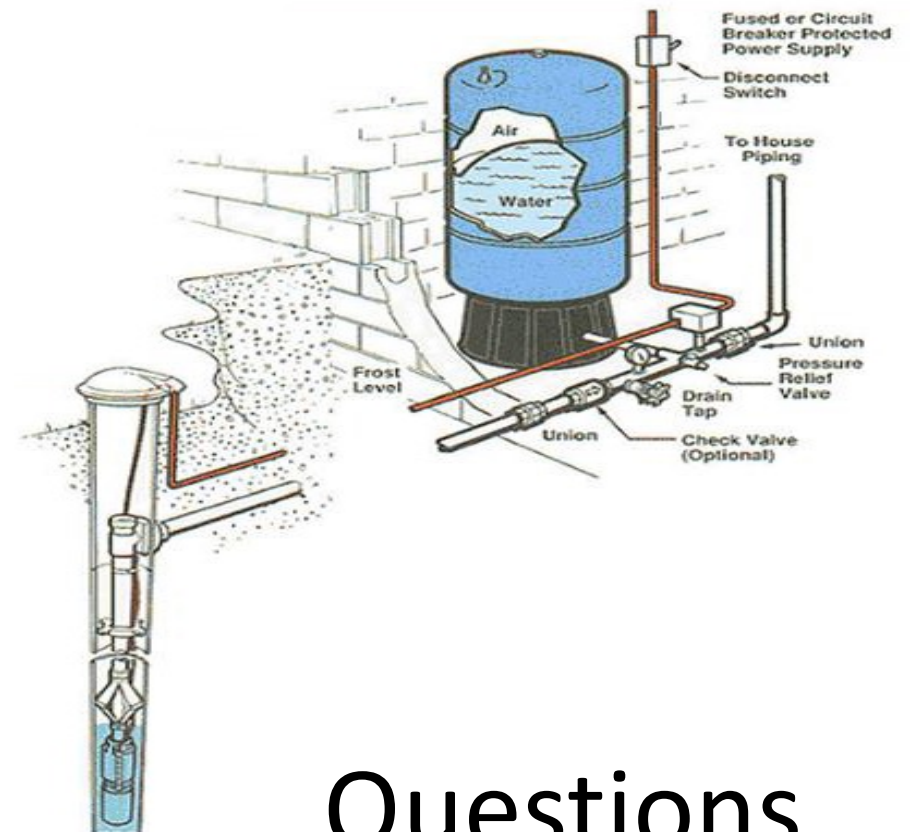
- Are there any sources of potential contamination near your well?
- Is your wellhead protected?
- Does your well have a secure vermin proof cap?
- Does the well casing stickup at least a foot from the ground?
- Is there an unfilled space or gap between the well casing and the ground around the well?
- Are there any cracks in the surface seal around the well casing?
- Is the well finished below grade?

If you answered “yes” to any of the previous questions

Fix the problem(s) before disinfecting

Groundwater and your well

- Groundwater is shared by your family, your neighbors, and the environment;
- Regularly inspect your well and see if any upgrades or maintenance is required;
- Regularly test your water;
- Keep good records of water levels, water testing, chlorination, and repairs and maintenance, pumping test reports;
- The well is part of the water supply system.



Questions